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The Great Basin Experiment Station

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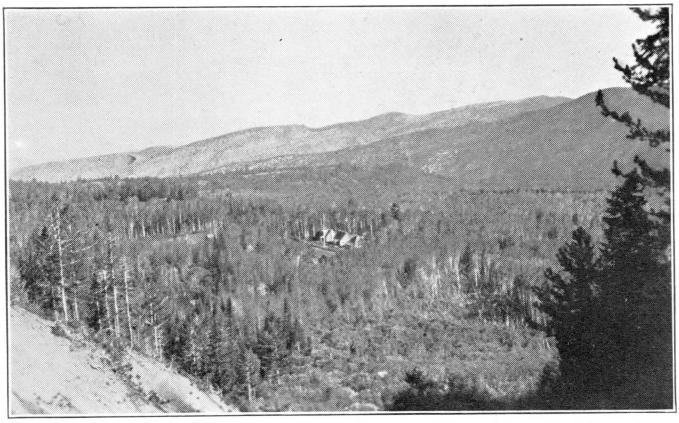
The Great Basin Experiment Station is unique in its position as a prominent station devoted to the solving of range problems. Because it features an important phase of Forest Service work, it is of interest to foresters generally.

Scientific research in range management was commenced by the United States Forest Service in 1907, and the investigators worked in several of the far western states. It was felt that headquarters should be provided where intensive studies might be carried on, and in 1913 a grazing experiment station was established. A location was sought among the "grazing forests," and intermediate in climatic and vegetative conditions between the Northwest and Southwest. The selection was made on the Manti National Forest of central Utah, where an abundance of representative range problems may be met first hand.

The Manti is typical of Utah's "Forests," and practically its whole area is grazed by live stock. Being centrally located as to agricultural development and also desert winter ranges, it has always been in great demand as a summer grazing



The Great Basin Experiment Station, situated in one of the most heavily grazed of all our National Forests. Manti National Forest.

ground. The very excellence of its native forage led to early abuse, since its abundant high range furnishes first class succulent feed even in late summer. Thus prior to Forest Service regulation, many a broad, high ridge and productive canyon were partly or even totally stripped of vegetation. Some of these areas have been greatly improved under Forest Ser-

vice administration, and many may be recognized at a glance as capable of much higher forage production.

Likewise, if demand be a criterion of range value, here, indeed, is a worthy place to begin range investigation. The valleys on either side are well utilized as hay and grain farms and their occupants have created the maximum demand known for National Forest grazing privilege. It was said a few years ago that nearly one-fourth of all National Forest grazing permits were issued on this one Forest alone. The average cattle permit was about twenty-five head and the average sheep permit about two hundred head, this on a forest of some three quarters million acres and carrying over 20,000 cattle and horses and 140,000 sheep for the summer grazing season. With such demand for range, we naturally find intensive utilization which presents ample grazing problems.

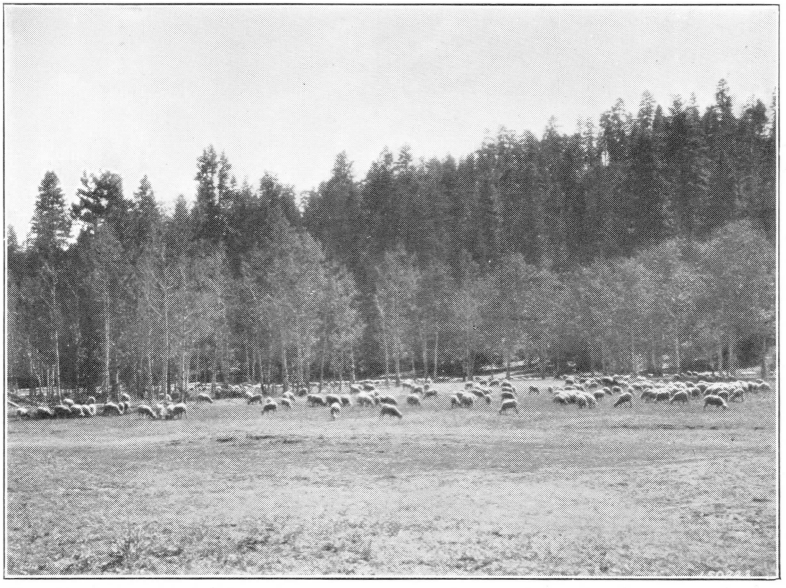
The Experiment Station is located some seven miles southeast of the town of Ephraim, and on an auto road connecting the two valleys. It occupies a picturesque site in an aspen grove at 8000 feet elevation, with a bold steep slope of a thousand feet as a near background. The location is intermediate as to elevation; and from the valley floor, slightly over 5,000 feet above sea level, to the summit of nearly 11,000 feet may be encountered the sagebrush, rabbit-brush, oak-brush, aspen-fir associations, each with its variations in types.

The upper slopes were the most seriously damaged formerly and probably present the most difficult problems. At 10,000 feet elevation has been established an Alpine substation where many of the important experiments are conducted. Here is located the erosion experimental plots with settling tanks for measuring water runoff and accompanying sediment, a novel experiment and productive of startling results. Preventive methods under observation include terracing with tree and shrub planting to check erosion. Other revegetation experiments are in operation with both native and cultivated species. Methods for eradicating poisonous plants, as also stages in plant succession are studied at these higher elevations, and climatological data accumulated are especially valuable.

In the recent activity of the Station the projects of plant vigor and browse study are especially interesting and promising. The former involves a detailed study of the effects on forage plants of various harvesting systems, and has given us already some valuable facts, part of which are reported on a chart, "The Effect of Grazing on Bunchgrass Range." Though oak and other browse species cover a great percentage of foothill range, we have no definite information as to

carrying capacity, adaptability to sheep or cattle, and fattening value of various species and mixtures of species. An experiment on the Dixie National Forest in southwestern Utah is in progress and will help in solving these questions.

A few words as to personnel are considered appropriate. Every year a force of five or six men are employed for the field season. These and many other Forest Service officials have contributed more or less directly to the success of the



Great Basin Station. But the two outstanding figures have been Dr. Arthur W. Sampson, former Forest Service Ecologist and director of the station since its establishment, and James T. Jardine, formerly in charge of Forest Service Grazing Studies. It is to be regretted that our government bureaus fail to retain such capable and experienced men in their employ. The latter named resigned some three years ago to become Director of the Oregon Agricultural Experiment Station, and the former last autumn accepted an associate professorship at the University of California. The affairs of the station are now directly in charge of Clarence L. Forsling, for several years director of the Jornado Range Reserve in New Mexico and whose training and experience qualify him excellently for the work. We may, then, continue to look for leading data in range management from the Great Basin Experiment Station.